

SILAYEVA, V.I.; LITVINOVA, V.D.

Some results of measuring vertical wind gradients during flights  
of free balloons. Trudy TSAO no.24:52-58 '58. (MIRA 12:1)  
(Winds) (Aeronautics in meteorology)

LITVINOVA, V.D.; SILAYEVA, V.I.

Results of studying vertical motions of air during the flight of  
free balloons. Trudy TSAO no. 34:79-97 '60. (MIRA 13:10)  
(Atmospheric turbulence) (Aeronautics in meteorology)

8/789/62/000/043/004/005

**AUTHORS:** Reshchikova, A.A., Silayeva, V.I.

**TITLE:** Some problems of the methodology of vertical and horizontal aircraft sounding of the atmosphere.

**SOURCE:** Tsentral'naya aerologicheskaya observatoriya. Trudy, no.43. Moscow, 1962, 65-71.

**TEXT:** The paper examines the determination of the dynamic-pressure-correction (DPC) coefficient (C) for the temperature (T) as measured by the ЦАО (TsAO) electrometeorograph (EM) aboard high-speed aircraft (A/C), such as the TU-104 and IL-18 A/C, and discusses the plotting of representative cross-sections through midlatitude jet-streams. The thermometer (TM) element used was a Pt-resistance TM enclosed in a Zaytsev-Ladokhovitch metal fairing. The formerly employed method of determining the DPC C by making high-level-speed ( $V_{max}$ ) and minimum-level-speed ( $V_{min}$ ) runs of 2 - 3 min each, forward and reverse, over a given horizontal track, was abandoned, since the large turning radii of high-speed A/C make the return to a given track uncertain and the maintenance of a rigorously constant IAS is extremely difficult at either end of the IAS range of such A/C. The new method consists in a constant-elevation operation in which the IAS is gradually varied from  $V_{max}$  to  $V_{min}$  and back. The test runs were made preferably in anti-cyclonic and clear-sky conditions in which the constant-level horizontal T gradients were extremely small. Flights within ice-crystal clouds, at some distance from

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frontal phenomena, were also satisfactory. The DPC C was then determined from the IAS and T readings; it assumed the same value for the TU-104 and the IL-18 A/C for the given faired EM. Errors: Frequently, the EM pressure (P) reading during take-off (TO) and landing (L) is at variance with station pressure by as much as 10-12 mb; this is attributed to airflow irregularities in the TO and L configuration of the A/C; hence, station data should be employed and not EM data. Displacements of the light dots of the K4-51 recorder should be verified by reference to their initial positions. If a flight, while following an isobar, passes above an underlying frontal surface, the elevation determination may be in error by 100-200 m, unless a vertical sounding through the frontal surface provides accurate information about the vertical T distribution. Static-pressure-line leaks may be a source of major errors. A comparison between A/C soundings and balloon soundings performed within 2 hrs of the APOB was made. T inversions, isothermal layers, and the tropopause were picked up by the A/C EM some 300 m earlier than by the radio-sonde (smaller time lag because of better ventilation). A/C soundings picked up thin inversion layers that were missed completely by the balloon sondes. In the 1-9-km layer the balloon-sonde T readings were, in the mean, 2.3°C lower than the A/C readings, with a r.m.s. deviation of  $\pm 2^\circ\text{C}$ . Above the 9-km level (tropopause) the difference between the means became smaller, the r.m.s. deviation greater. Some aspects of the construction of mean vertical atmospheric cross-sections are

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described, for example, mean vertical soundings performed by an expedition in the Far East in which jet-stream phenomena were found to be associated with an upper front which could be traced from a 5-6-km elevation to the tropopause within its steepest or broken-up portion, and in which it was made manifest that the jet-stream axis was located underneath the tropical tropopause in its warm region. To obtain such a mean cross-section, each individual aerological cross-section was divided into rectangles, the height of which was the vertical distance from the point of intersection of the tropical tropopause with the upper boundary of the frontal surface (Point (a) on Fig. 3, shown on Card 4i) to the intersection of the same vertical with the lower boundary of the frontal surface (b), and the width of which was the horizontal distance from the latter point (b) to the upper boundary of the frontal surface (c). For each of these rectangles the mean T and mean wind velocity was determined. If any one rectangle covers a frontal region or regions above and below the tropopause, then two mean temperatures must be computed. The mean wind velocity should be obtained as a deviation of the isotachs passing through the rectangle under consideration from the maximum isotach of the jet stream. The result is a mean vertical cross-section of the jet stream. The center of the coordinates is tentatively placed at the point of intersection of the tropical tropopause with the frontal surface. The mean isotach isodeviations (in %) and the mean isotherms are connected with continuous and broken lines, respectively. Similarly, cross-sections can be drawn showing the distribution of A/C g-loads

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in jet streams. There are 3 figures and 3 Russian-language Soviet references.

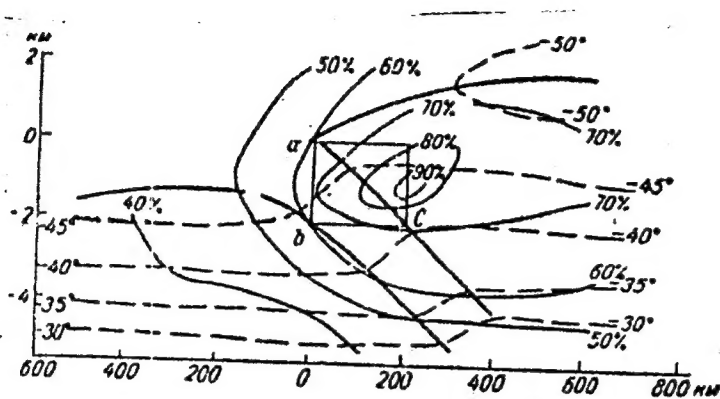


Fig. 3. Model of a cross-section of a jet stream.

ASSOCIATION: None given.

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SILAYEVA, V.I.; Prinimali uchastiye: SIDORIN, I.I., prof.; SIMAKOV, A.V.;  
LAZUTIN, D.D.

MVTU-1 aluminum foundry alloy. Alium. splavy.no.1:14-21 '63.  
(MIRA 16:11)

ACCESSION NR: AP4005829

AUTHOR: Silayeva, V. I.

TITLE: Phase transformations in crystallization of MVTU-1 die-casting aluminum alloy

SOURCE: Metalloved. i termich. obrab. metallov, no. 12, 1963, 28-30

TOPIC TAGS: phase transformation, MVTU 1 aluminum alloy, die casting alloy, aluminum alloy composition, phase transformation, phase diagram, aluminum alloy structure, aluminum silicon magnesium copper alloy, alloy aging, aluminum alloy

ABSTRACT: A new die-casting aluminum alloy, MVTU-1 (7.5—8.5% Si, 0.3—0.5% Mg, 0.3—0.5% Mn, 1—1.5% Cu, 0.1—0.3% Ti, 0.9% min Fe, 0.2% min Zn), has been developed at the MVTU im. Bauman. The alloy possesses high mechanical properties, high fluidity, small shrinkage, high corrosion resistance, and good machinability. Since manganese, iron, and titanium have no effect on phase transformation, the phase transformations of the new alloy can be determined from the Al-Si-Mg-Cu phase diagram. A section of this diagram for 90% aluminum and

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ACCESSION NR: AP4005829

0.4% magnesium (see Fig. 1 of the Enclosure) shows the transformations which the MVTU-1 alloy undergoes during crystallization. The W phase contains aluminum, silicon, magnesium, and copper; its exact formula is not known. Results of differential thermal analysis of the alloy cooled at a rate of less than 1C/min agreed with the diagram. Study of die-cast parts, however, showed that the new alloy has a metastable structure when quenched from the molten state. This metastable structure is associated with high mechanical properties: tensile strength, 27—32 kg/mm<sup>2</sup>; elongation, 3—5%; impact strength, 1.2 to 1.7 m·kg/cm<sup>2</sup>; hardness, HB 70—80. Aging (without solution annealing) at 180C for 8 hr brings about an increase in tensile strength of 3 to 4 kg/mm<sup>2</sup> and in hardness of 20 kg/mm<sup>2</sup>, but elongation drops to 3%. Apparently, rapid cooling during die casting prevents primary diffusion and, consequently, precipitation of the ternary and quaternary eutectics. The aluminum-base solid solution becomes oversaturated with copper, magnesium, and silicon, which precipitate during aging, probably as CuAl<sub>2</sub> and Mg<sub>2</sub>Si. Orig. art. has: 2 figures.

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ACCESSION NR: AP4005830

AUTHOR: Sidorin, I. I.; Fridlyander, I. N.; Silayeva, V. I.; Kuznetsova, Ye. A.

TITLE: Investigation of the structure and properties of SAP-1 material

SOURCE: Metalloved. i termich. obrab. metallov, no. 12, 1963, 35-37

TOPIC TAGS: sintered aluminum powder, SAP sheet, SAP sheet structure, SAP sheet strength, SAP sheet ductility, SAP cold rolling, SAP hot rolling, SAP sintering SAP annealing, SAP structure, SAP property, SAP alloy

ABSTRACT: The authors have investigated the effect of technological conditions, especially the temperature of preliminary sintering and annealing, on the structure and mechanical properties of sintered aluminum powder products at higher temperatures (especially above 500C). The tested material was first sintered at temperatures of 500 and 650C for 2 hours, hot pressed at 500C under a specific pressure of 55 kg/mm<sup>2</sup>, pressed at 500-550C with 89.5% deformation, hot rolled at 500C with 70% deformation, and cold rolled with a deformation of 50%. Preliminary sintering at higher temperatures (650C) decreased the strength and hardness of the semifinished product and increased the percentage of elongation. This effect may be due to recrystallization in microvolumes. The texture formed as a result of pressing and hot and cold rolling of this material was very stable up

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ACCESSION NR: AT4011396

S/2789/63/000/047/0055/0062

AUTHOR: Reshchikova, A. A.; Silayeva, V. I.; Shmeter, S. M.

TITLE: Growth of cumulonimbus clouds and characteristics of the temperature field above them in the upper troposphere and in the tropopause zone

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy\*, no. 47; 1963. Fizika oblakov, 55-62

TOPIC TAGS: meteorology, atmospheric convection, cloud, cumulonimbus cloud, tropopause, troposphere, temperature field, upper troposphere, air temperature, stratosphere, lower stratosphere

ABSTRACT: An investigation of the fields of meteorological elements near the upper part of 94 cumulonimbus clouds was made by the Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory) in 1959-1961. A TU-104 flying laboratory was used; it carried an electrometeorograph, apparatus for measurement of turbulence and a Doppler set for determination of wind velocity and direction. The flights were made in the Soviet Far East and European Russia. Emphasis is on the rate of growth of cumulonimbus clouds at heights of 8-12 km. At the time of strong convection these clouds can penetrate into the tropopause layer and even into the lower stratosphere. In the tropopause zone the rate of growth of clouds

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ACCESSION NR: AT4011396

sometimes exceeds 1 meter/second. Air temperature directly over the tops of cumulonimbus can differ by several degrees from its values in the zone outside the clouds. The temperature is lower over growing clouds than in the surrounding atmosphere but over cumulonimbus whose growth is terminating the temperature is higher than in the surrounding atmosphere. Typical examples of these characteristics are shown in Enclosures. Orig. art. has: 3 figures and 4 tables.

ASSOCIATION: TSENTRAL'NAYA AEROLOGICHESKAYA OBSERVATORIYA (Central Aerological Observatory)

SUBMITTED: 00

DATE ACQ: 24Feb64

ENCL: 03

SUB CODE: AS

NO REF SOV: 003

OTHER: 003

Card

2182

SIMETER, L.M.; REZNICHKOVA, A.A.; SILAYOVA, V.I.; VARCHOVA, I.P.

Characteristics of the horizontal temperature distribution in  
a zone of cumulonimbus clouds. Trudy TSO no.53:77-90 '63.  
(MIRA 17:10)

ACCESSION NR: AT4045516  
S/2789/64/000/053/0091/0100

AUTHOR: Reshchikova, A.A., Silayeva, V.I., Shmeter, S.M.

TITLE: Turbulence causing aircraft bumping in a zone of cumulonimbus clouds

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy\*, no. 53, 1964.  
Dinamika atmosfery\* (Atmospheric dynamics), 91-100

TOPIC TAGS: meteorology, atmospheric turbulence, aircraft turbulence, cloud, cumulus cloud, cumulonimbus cloud, aviation meteorology

ABSTRACT: On the basis of data obtained in special flight investigations of atmospheric turbulence causing the bumping of aircraft in a zone of Cb clouds the authors present data on the frequency and intensity of bumping (aircraft turbulence) of jet aircraft near the tops of Cb and to some extent within them. They discuss the effect of wind flow around Cb on the structure of zones of aircraft turbulence near these clouds. The following conclusions are drawn: 1. Within the tops of Cb, in the layer up to 500 m beneath their upper boundary, aircraft turbulence of some duration is virtually always observed. In clouds which have ceased their upward growth the intensity of such turbulence is not

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ACCESSION NR: AT4045516

more moderate. Only in extremely rare cases is the overload increment as much as 0.5-0.8 g. In the tops of upward developing clouds the turbulence is manifested as sharp upward and downward thrusts. The intensity of bumping can be very strong with overload increments reaching up to  $\pm 1g$  and even somewhat greater. 2. During flight within the tops of growing Cb an aircraft experiences transverse horizontal overloads which "shove" it from side to side. In many cases there is also a long-period "pitching". 3. Flight over Cb at a distance of more than 200 m above the cloud boundary are virtually free of turbulence. 4. Over Cb, turbulent zones are encountered in the direction of the wind vector more frequently than over sectors situated perpendicular to the wind. These zones are situated not only over the cloud, but also extend 5-10 km to one side. The horizontal extent of turbulent zones is 33-50% smaller alongside developing clouds than alongside fully developed clouds. 5. In approximately 80% of the cases the turbulent zones over Cb are continuous, but in 20% of the cases they have a discontinuous character, with calm zones between the turbulent sectors. The latter is observed only alongside Cb calv and Cb calv - Cb inc. 6. The turbulent zones near the upper third of Cb are sometimes asymmetrical relative to the direction of the wind vector. On the leeward side of

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ACCESSION NR: AT4045516

the cloud these zones are more elongated horizontally and the intensity of turbulence is maximum. In many cases (especially beyond the leeward boundary of Cb), there is a second region of high turbulence at a distance of several kilometers from the turbulent zone adjacent to the cloud. This region can persist for 15-20 minutes, almost without changing in size or intensity. "In conclusion, the authors wish to thank M. M. Kulik and V. S. Aleksandrov, their colleagues at the GosNI GVF, for organizing and carrying out the aircraft investigations." Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

ENCL: 00

SUB CODE: ES

NO REF SOV: 004

OTHER: 001

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REZNIKOVA, A.A.; SILAYEVA, V.I.; SHMETIK, S.M.

Turbulence causing airplane bumpiness in a zone of cumulonimbus clouds. Trudy TSO no.53:91-100 '64.

(MIRA 17:10)

RESHCHIKOVA, A.A.; SILAYEVA, Y.I.; SHMETER, S.M.

Growth of cumulonimbus and the characteristics of the overlying  
temperature field in the upper troposphere and in the tropopause  
zone. Trudy TSAO no.47:55-62 '63. (MIRA 16:12)

L 10226-66 EWT(m)/EVA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD  
ACC NR: AP502759<sup>4</sup> SOURCE CODE: UR/0145/65/000/009/0133/0136

AUTHOR: Silayeva, V. I. (Candidate of technical sciences) 68

ORG: MVTU im. N. E. Bauman <sup>44.55</sup>

TITLE: Investigation of the heat treatment of VAD-23 aluminum alloy

SOURCE: IVUZ. Mashinostroyeniye, no. 9, 1965, 133-136 <sup>44.55, 27</sup>

TOPIC TAGS: aluminum, aluminum alloy, heat resistant alloy, metal heat treatment, solid mechanical property/VAD 23 alloy <sup>14</sup>

ABSTRACT: Experiments have been conducted to determine optimum conditions of heat treatment for VAD-23 wrought, heat-resistant aluminum alloy which would reduce the internal stresses and warping in thin sheets induced by conventional heat treatment. The VAD-23 alloy of the <sup>14</sup>Al-Cu-Li-Mn-Cd system contains 4.9—5.8% Cu, 0.4—0.8% Mn, 0.1—0.25% Cd, and is used for prolonged operation at temperatures up to 160—180C. Clad sheets 2.5 mm thick were solution heat treated at 525C for 30 min, quenched in oil having a temperature of 170C, and aged at this temperature for 3, 6, 9, 12, and 16 hr. Aging VAD-23 alloy at 170C for 9 hr resulted in a tensile strength of 53.3 kg/mm<sup>2</sup>, a yield strength of 47.6 kg/mm<sup>2</sup>, an elongation of 6.0%, and a fatigue strength of 9.7 kg/mm<sup>2</sup>, compared with 57.3 kg/mm<sup>2</sup>, 52.6 kg/mm<sup>2</sup>, 5.2%, and 8.7 kg/mm<sup>2</sup> for conventionally heat treated alloy (solution annealed, water quenched, and aged at 170C for 16 hr). Thus, solution heat treatment at 525C for 30 min followed by

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ACC NR: AP5027594

oil cooling to 170C and aging at this temperature for 9 hr ensures satisfactory strength and ductility, increases fatigue strength, and lowers internal stresses and warpage in the VAD-23 alloy. The latter is of great practical importance in that it reduces rejects in the heat treatment of the alloy. Orig. art. has: 3 figures and 1 table. [MS]

SUB CODE: 11, 13/ SUBM DATE: 03Mar65/ ORIG REF: 003/ ATD PREP?: 4163

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L 07938-67 EWT(m)/EWP(t)/ELL LIP(m) JD  
ACC NR: AP6027631 (N) SOURCE CODE: UR/0145/66/000/006/0107/0110

AUTHOR: Kosolapov, G. F. (Candidate of technical sciences); Silayeva, V. I. (Candidate of technical sciences)

ORG: None

TITLE: Investigation of deformations in VAD-23 alloy during aging

SOURCE: IVUZ. Mashinostroyeniye, no. 6, 1966, 107-110

TOPIC TAGS: aluminum base alloy, x ray analysis, solid solution, lattice parameter, metal aging

ABSTRACT: The authors study volumetric changes during artificial aging of VAD-23 alloy. The initial material had the following chemical composition (%): Cu -- 5.3, Li -- 1.2, Mn -- 0.5, Cd -- 0.2 and the remainder Al. The specimens were tempered at 525°C and aged at 150, 170 and 190°C. A tube with a copper anode was used for x-ray photography in a KROS camera. The atomic lattice period was determined by the position of the interference lines from planes (511) and (333). Curves for the change in the lattice constant of the solid solution as a function of aging time indicate that the aging process in VAD-23 alloy is similar to this process in other aluminum alloys in which precipitation follows a preliminary stage. These two stages are separated by a period in which the lattice parameter remains constant for aging temperatures of 150

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ACC NR: AP6027631

and 170°C. The time for both stages is reduced as temperature is increased. The time for complete decomposition of the solid solution is 26 hours at 150°, 4 hours at 170° and 1 hour at 190°C. It was found that hardness increases during both stages with maximum increase in the precipitation stage. This indicates that the structure of the alloy is stable with respect to phase composition and concentration after heat treatment to maximum hardness and strength. The length of the specimens is increased by changes in the structure of the solid solution during the stage preceding precipitation. The specimens continue to increase in length up to complete decomposition of the solid solution although at a slower rate in the second stage. The change in the linear dimensions of the specimen is approximately 0.1% of the original dimensions. Plastic deformation of the tempered alloy accelerates the aging process somewhat although the change in dimensions is of the same order ~0.1%. The article was presented for publication by Doctor of technical sciences, Professor I. I. Sidorin, MVTU. Orig. art. has: 5 figures.

SUB CODE: 11/ SUBM DATE: 18Nov65/ ORIG REF: 004

Card 2/2 *eqh*

ACC NR: AP6034029

SOURCE CODE: UR/0050/66/000/010/0007/0013

AUTHORS: Shmeter, S. M. (Candidate of physico-mathematical sciences); Silayeva, V. I.

ORG: Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya)

TITLE: Vertical currents within cumulonimbus clouds

SOURCE: Meteorologiya i gidrologiya, no. 10, 1966, 7-13

TOPIC TAGS: atmospheric cloud, atmospheric turbulence, air mass

ABSTRACT: During the interval 1959-65, the TsAO, jointly with GosNIIGA and GGO, made a study of the temperature, wind, and vertical-movement fields in the Cb zone. A TU-104B airplane, set up as a laboratory with special apparatus, was used to make 698 series of measurements in 294 different Cb cloud zones. Most flights were made at heights from 7 to 11 km, and most turns were made several hundred meters within the cloud, maximum penetration being about 1000 m. The vertical component of air velocity was computed by means of data supplied from measurements of overloading and shift of the plane's center of gravity. The most intense vertical movements were most frequently observed near the center of the cloud (laterally) and between the center and the top (vertically). Downdrafts were found to be 20-30% weaker than updrafts at all stages of cloud development. No more than 10-12 zones of large-scale downdrafts were generally observed, and these occupied no more than 30-50% of the total

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vertical of the cloud. During development of the cloud, non-turbulent zones were found only within 10--30 m of the sides or top of the cloud. The downdrafts, rather than being merely compensatory effects, were found to be associated with actual precipitation. They did not appear until precipitation began. Analysis of data from the flight has shown that the coefficient of turbulence is maximal in mature Cb clouds, where the value may exceed  $50 \text{ m}^2/\text{sec}$ , and is minimal at the end of the stage of cloud disintegration, when it may be less than  $150 \text{ m}^2/\text{sec}$ . In stratus clouds the coefficient does not exceed 30--50  $\text{m}^2/\text{sec}$ . In large mature Cb clouds, where a large number of moderately sized updrafts and downdrafts are present, the vertical exchange of mass by these drafts may be 5--10 times the exchange by turbulent currents. Orig. art. has: 3 figures, 3 tables, and 3 formulas.

SUB CODE: 04/ SUBM DATE: 18May66/ ORIG REF: 006/ OTH REF: 002

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33095

S/618/61/001/002/018/056  
B102/B13A

24.6710  
AUTHORS:

Gerasimov, A. G., Gorbunov, A. N., Dubrovina, V. A., Kalpov, D., Kuvatev, K., Orlova, A. I., Osipova, V. A., Sakovich, V. A., Silayova, V. S., Fomin, Yu. A., Cherenkov, P. A.

TITLE:

Study of photodisintegration of nitrogen, oxygen, and neon

SOURCE:

Tashkent'skaya konferentsiya po mirnoy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 134 - 153

TEXT: The photodisintegration of  $N_7^{14}$ ,  $O_8^{16}$ , and  $Ne_{10}^{20}$  was studied by means of a Wilson chamber in a magnetic field acting directly on the bremsstrahlung beam. In order to be able to distinguish reactions up to  $\gamma_{ph}$ , and record the recoil nuclei, the Wilson chamber was filled with a mixture consisting of the gas to be investigated (nitrogen or neon) and hydrogen. Reduced pressure was used in experiments with oxygen. In experiments with nitrogen, oxygen, and neon, the stopping power for protons was 0.65, 0.31, and 0.50 relative to air. The mean energy of the photo-  
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Study of photolysis-integration ...

protons from  $\gamma$ pn reactions was lower than that from  $\gamma$ p reactions. The effective cross sections were calculated; their shape indicates the importance of transitions in the residual nuclei. The proton angular distribution from  $\gamma$ pn reactions is nearly isotropic for low proton energies. For high proton energies ( $>20$  Mev), it is very similar to that in deuteron photolysis-integration. The proton angular distribution from  $\gamma$ p reactions is approximately isotropic for  $N_7^{14}$  and  $O_8^{16}$  at low energies. In the expression  $d\sigma/d\Omega = A((B/A\sin^2\theta + C/A\sin^2\theta \cos\theta + D/A\cos\theta))$ , the effect of the last three terms in parentheses increases for higher energies. The isotropic part of the angular distribution is greater for  $N_7^{14}$  than for the two other isotopes. An abnormally high yield of the  $\gamma$ pn reaction was found for  $N_7^{14}$ ; it is attributed to interaction of a photon with a pair of "valency" nucleons in the outer shell, which are in the  $1p_{1/2}$  state with parallel spins. During photon absorption, the electric dipole absorption plays an essential part in N and O nuclei. The logarithmic moments of the photon-absorption cross sections are in good agreement with results obtained on the basis of an independent-particle model. Yu. K. Khokhlov

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X



S/056/62/042/003/017/049  
B102/B138

AUTHORS: Gorbunov, A. N., Dubrovina, V. A., Osipova, V. A., Silayeva, V. S., Cherenkov, P. A.

TITLE: Investigation of the photoeffect on light nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 3, 1962, 747 - 757

TEXT: A cloud chamber with a field of  $10.5 \cdot 10^3$  oe was used to measure the yields from photonuclear reactions with nitrogen, oxygen and neon and the cross sections  $\sigma_0 = \int \sigma(E) dE$ ,  $\sigma_{-1} = \int \sigma(E) E^{-1} dE$ , and  $\sigma_{-2} = \int \sigma(E) E^{-2} dE$ , where  $\sigma(E)$  is the total photon absorption cross section. The maximum bremsstrahlung used was  $E_{\text{max}} = 170$  Mev. Besides the photonuclear reactions given in Table 1, some 3 - 6 pronged stars were observed but not identified. The following results were obtained from 5300 (N), 8500 (O) and 8500 frames (Ne) taken in these experiments: The ratios of the yields of the  $(\gamma, pn)$  and  $(\gamma, p)$  reactions on the " $\alpha$ -nuclei"  $O^{16}$  and  $Ne^{20}$  are almost equal and amount to  $\sim 20\%$ . For a free  $\alpha$ -particle this value equals  $\sqrt{2}$ .

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Investigation of the ...

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B102/B138

175. For  $N^{14}$  this ratio is many times higher, being  $1.90 \pm 0.07$ . This indicates that  $(\gamma, pn)$  is the main reaction for  $N^{14}$ , though its threshold is higher than that of  $(\gamma, p)$  and  $(\gamma, n)$ . This fact is attributed to the low thresholds of emission of the valent nucleons from  $N^{13}$  and  $C^{13}$ . The yield of  $(\gamma, pn)$  reaction on N exceeds those for O and Ne by a factor of 3.5. It is attributed to the decay of a highly excited  $C^{12}$  nucleus due to a  $(\gamma, pn)$  reaction. The yield of three-pronged Ne stars is also high due mainly to  $(\gamma, p\alpha)$  reactions. Apparently the  $N^{20}(\gamma, p\alpha)N^{15}$  reaction is the result of an  $\alpha$ -emission of excited  $F^{19}$  produced in a  $(\gamma, p)$  reaction. The  $(\gamma, \alpha)$  reactions were small for all nuclei. The cross sections have been measured separately for all reaction types. When these separate values are summed up, the following is obtained for  $N^{14}$ ,  $O^{16}$  and Ne respectively:  $\sum \sigma_0$ : 347, 438, 600 Mev.mb;  $\sum \sigma_{-1}$ : 12.5, 12.8, 18.0 mb;  $\sigma_{-2}$ : 0.46, 0.43, 0.60 mb/Mev. The theoretical values obtained with  $\sigma_0 = 60(NZ/A)$ , Mev.mb  $\sigma_{-1} = 0.36A^{4/3}$  mb, and  $\sigma_{-2} = 2.25A^{5/3}$   $\mu$ b/Mev are, Card 2/4

Investigation of the ...

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except for  $\sigma_{-1}$ , lower. The experimental values can be explained by the summation rule. The integral cross sections agree with calculations for electrical dipole absorption when exchange forces are taken into account. The small difference between the  $(\gamma, p)$  and  $(\gamma, n)$  reactions and the very small one between the  $(\gamma, \alpha)$  reactions of the nuclei agree with the conception of the charge independence of nuclear forces. A. G. Gerasimov, A. I. Orlova, N. Pluzhnikova, V. A. Sakovich, Yu. A. Fomin, and V. Ye. Yakushkin are thanked for assistance. There are 3 figures, 5 tables, and 36 references: 11 Soviet and 25 non-Soviet. The four most recent references to English-language publications read as follows: D. Balfour, D. C. Menzies. Proc. Phys. Soc. 75, 543, 1960; J. S. Levinger. Nuclear Photoisintegration, Oxford, University press, 1960. G. Brown, M. Bolsterli. Phys. Rev. Lett 3, 472, 1959; K. Okamoto. Phys. Rev. 116, 428. 1959.

SUBMITTED: October 28, 1961

Card 3/4

SILANEVA, Ye. A.

Mbr., Chair Org. Chem. Moscow Pharmaceutical Inst., Min. Public Health, -1949-c50-.

Mbr., Lab. Physiological Chemistry, Dept. Biol. Sci., Acad. Sci., -c1949-c50-.

"Study of the Properties of 1, 6-Diphosphate of Fructose," Dok. AN, 68, No. 1, 1949;

"Some Properties of 1, 6-Diphosphate," Biokhim., 14, No. 6, 1949;





SILAYEVA, Ye. A.

USSR/Medicine-Shock Therapy

1 Sep 50

"Treatment of Traumatic Shock in Animals With Fructose 1,6-Diphosphate,"  
P.F. Minayev, B. N. Stepanenko, Ye. A. Silayeva, Lab Physiol Chem, Acad Sci  
USSR, Moscow Phar Inst

"Dok Ak NaukSSSR" Vol LXXIV, No 1, pp 153-156

Discusses results of 35 tests of treating traumatic shock in cats and dogs by introduction of fructose 1,6-diphosphate suboccipitally, (2-4 mg per kg of body wt), and intravenously and intra-arterially (2-2.5 mg per kg of body wt). Suboccipital introduction was highly effective in shock of light and medium severity, but only introduction into blood produced good therapeutic effect in cases of deep shock. Submitted 20 Jun 50

PA 174T36

KOZLOV, V.V.; SILAYEVA, Ye.A.

Anthraquinone series. Part 31: Sulfonic acids of trans-dibenzopyrenequinone. Zhur. ob. khim. 30 no.11:3766-3772  
N°60. (MIRA 13:11)

1. Moskovskiy institut narodnogo khozyaystva imeni G.V.Plekhanova.  
(Dibenzopyrenequinone)

SILAYEVA, Ye.M.

Corticogen~~is~~ experimental hypertension and the increase in blood coagulability. Trudy Gos. nauch.-issl. psikhonevr. inst. no.20: 293-301 '59. (MIRA 14:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy psikhonevrologicheskiy institut imeni V.M. Bekhtereva, Leningrad.  
(HYPERTENSION) (NERVOUS SYSTEM)  
(BLOOD COAGULATION)

SILAYEVA, Ye.M.; NAUMOVA, O.A.; GINZBURG, Ye.G.

Role of the oxygen factor in preventing increased coagulability of the blood in experimentally induced nervous tension. Trudy Gos. nauch.-issl. psikhonevr. inst. no.24:61-65 '61. (MIRA 15:5)

1. Patofiziologicheskaya laboratoriya Gosudarstvennogo nauchno-issledovatel'skogo psikhonevrologicheskogo instituta imeni Bekhtereva.  
(STRESS (PHYSIOLOGY)) (BLOOD--COAGULATION)

SILAYEVA, E. V.

26966 SYROKOSKIY, V. S. , SILAYEVA, E. V. , AVILOV, V. - Viyaniye Kompleksobrazovaniya Na Velichinu Potentsiala Sistem, Imeyushchikh Analitichyeskoe Znacheniye. Soobshch 4. Zavodskaya, 1949, No 8, S. 896-99

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

STEPIN, V.V.; SILAYEVA, Ye.V.

Gravimetric analysis of tungsten in concentrates and in steel alloys. Zav.lab. 21 no.2:149-151 '55. (MIRA 8:6)

1. Ural'skiy institut chernykh metallov.  
(Tungsten) (Metallurgical analysis)

66558

SOV/81-59-15-53184

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 15, p 130 (USSR)

AUTHORS: Stepin, V.V., Pliss, A.M., Silayeva, Ye.V.

TITLE: Methods for Determining Admixtures in Vanadium Metal. Communication 1.

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chern. metallov, 1958, Nr 4, pp 103-109

ABSTRACT: A photometric method has been developed for determining P in vanadium metal in the form of a blue phosphorus-molybdenum complex with preliminary separation of V on a H-cationite filter. For increasing the sensitivity of the method extraction of the blue complex by butyl alcohol has been applied. The method permits the determination of small quantities of P with an error of  $\pm 0.0005\%$ . A photometric method has also been developed for determining Si in vanadium metal in the form of a blue silicon-molybdenum complex with preliminary separation of V on a H-cationite filter. It has been established that for the preparation of the blue complex it is more expedient to apply Mohr's salt as a reducing agent; the error of determination is  $\pm 0.0075\%$ . The gravimetric method for determining Si in vanadium metal which is based on the separation of a gel of the silicic

Card Card 1/2

SOV/32-24-8-7/43

AUTHOR:

Stepin, V. V., Ponomov, V. I.,  
Silayeva, Ye. V.

TITLE:

The Separation of Trace Amounts of Bismuth, Cobalt, Nickel,  
Phosphorus, Iron, and Copper Using Ionites (Otdeleniye malykh  
kolichestv vismuta, svintsa, kobal'ta, nikelya, fosfora,  
zhel'za i medi s pomoshch'yu ionitov)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 8, pp. 934-938  
(USSR)

ABSTRACT:

In this paper chromatographic methods are described for separating the above metals in the analysis of nickel and nickel alloys. The separation is based upon the difference in the stability of the complex compounds which these elements form in concentrated acid solutions. In 8n hydrochloric acid these complexes are adsorbed onto the anionite, and with subsequent elution with 4-0.5n hydrochloric acid the less stable complexes of cobalt, copper, and iron are destroyed and completely desorbed. Lead is desorbed with a 0.02n hydrochloric acid solution, and bismuth with a 2n sulfuric acid solution. To separate out phosphate ions "vofatit p" and anionite

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e Separation of Trace Amounts of Bismuth,  
Cobalt, Nickel, Phosphorus, Iron, and Copper Using Ionites

SOV/32-24-8-7/43

type. **AN-2F** and **DM** were used. The latter were used in the  $\text{Cl}^-$  form, and the cationites were used in the  $\text{H}^+$  form. An analytical procedure is given which employs data obtained by Nel'son and Krause (Ref 4) in their investigations on the degree of adsorption of lead, and which can be used for the determination of iron according to the ion exchange method of D.I. Ryabchikov and V.Ye. Bukhtiarov (Ref 9). The separation of the iron and copper fractions in the method just referred to was not successful, and the probable cause of this failure was the variable quality of the anionite used. Also mentioned are the attempts of Mur and Kraus (Ref 5) to selectively elute nickel, manganese, cobalt, copper, iron, and others, in this order, from the anionite. There are 5 figures, 6 tables, and 12 references, 10 of which are Soviet.

ASSOCIATION: Ural skop. institut chernykh metallov (Ural Institute for Ferrous Metals)

Card 2/2

SILAYEVA, Ye.V.; KURBATOVA, V.I.

Determination of tin in ferromolybdenum. Zav. lab. 27 no. 12:1462-  
1464 '61. (MIRA 15:1)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.  
(Tin—Analysis) (Molybdenum-iron alloys)

SILAYEVA, Ye.V.; KURBATOVA, V.I.

Determination of antimony in ferromolybdenum. Zav.lab. 23  
no.3:230-231 1962. (MIRA 15:4)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.  
(Antimony--Analysis) (Molybdenum alloys)

STEPIN, Vasiliy Vasil'yevich; SILAYEVA, Yelizaveta Vasil'yevna;  
FLISS, Anastasiya Mikhaylovna; KURBATOVA, Vera Ivanovna;  
KRYUCHKOVA, Lidiya Merkur'yevna; PONOSOV, Vladimir Il'ich;  
DYMOV, A.M., doktor khim. nauk, prof., red.; FEDOROV, A.A.,  
st. nauchn. sotr., red.; TKACHENKO, N.S., inzh., red.;  
DOBRZHANSKIY, A.V., st. inzh., red.; LEVIT, Ye.I., red. izd-  
va; ISLENT'YEVA, P.G., tekhn. red.

[Analysis of ferrous metals, alloys and manganese ores] Ana-  
liz chernykh metallov, splavov i margantsevykh rud. [By] V.V.  
Stepin i dr. Moskva, Metallurgizdat, 1964. 498 p.

(MIRA 17:3)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii (for Dymov, Fedorov, Tkachenko, Dobrzhanskiy).

STEPIN, T.I.; SHAYOVA, Ye.Ye.

Review of the book "Industrial analysis in metallurgy by A.Ia.  
Iakovlev and B.F. Iakovleva. Zhur. anal. khim. 19 no.12:1523-  
1524 '64 (MIRA 18:1)

STEPIN, Vasil'iy Vasil'yevich; SILAYEVA, Yelizaveta Vasil'yevna;  
KURBATOVA, Vera Ivanovna; KHANOVA, Tamara Filaretovna;  
KARBASH, Tat'yana L'vovna; PONOSOV, Vladimir Il'ich

[Analysis of nonferrous metals and alloys] Analiz tsvetnykh  
metallov i splavov. Moskva, Metallurgiya, 1965. 187 p.  
(MIRA 18:9)

SILBER, Alois

Single purpose machines and automatic machines for production of mine detonators. Stroj vyr 10 no.8:389-390 '62.

1. Zavody Rijnove revoluce, n.p., Vsetin.

2.4.

*p*-Aminosalicylic acid. St. N. S. and M. S. Silberg, Univ. Chi. Rinnana. *Ind. Rep. Populare Romania*, 1949, No. 1, 559 (in 1949 French summary).—A new process is given for the synthesis of *p*-aminosalicylic acid from o-toluidine (II). II (40 g.) in 150 g. concd. H<sub>2</sub>SO<sub>4</sub> is treated with 28 g. (6%) HNO<sub>3</sub> and 100 g. concd. H<sub>2</sub>SO<sub>4</sub>; the mixt. poured after 1 hr. over 100 g. ice and H<sub>2</sub>O added to the ppt. formed until it is pasty; then NaOH soln. added; the 2:1 H<sub>2</sub>O : 1% NaOH soln. (III) in 10% (from EtOH) III heated with Ac<sub>2</sub>O gives the N-Ac deriv. (IV) in 1 hr. IV heated with H<sub>2</sub>O to give suspended in 2.5 l. H<sub>2</sub>O is heated to 90° and 1% NaOH and 17 g. KMnO<sub>4</sub> in 150 ml. H<sub>2</sub>O added; the mixt. heated on a water bath until decolorized,

100 ml. 1% KMnO<sub>4</sub> added; the MnO<sub>2</sub> filtered off after 8 hrs. and the clear soln. evapd. to 500 ml.; on cooling HCl ppt. about 7 g. 2,4-AcNH<sub>2</sub>C<sub>6</sub>H<sub>3</sub>(CO<sub>2</sub>H)<sub>2</sub> (V), m. 230° (from H<sub>2</sub>O). V in 10 ml. EtOH heated with 5 ml. concd. H<sub>2</sub>SO<sub>4</sub> until the soln. becomes red gives quantitatively on cooling the 2-H<sub>2</sub>N analog, m. 204°. To 5 g. VI is added 5 ml. of concd. H<sub>2</sub>SO<sub>4</sub>; the mixt. cooled below 0°, treated after 5 min. with 5 ml. H<sub>2</sub>O, stirred until the mixt. becomes pasty, cooled, 2 g. NaNO<sub>2</sub> in 20 ml. H<sub>2</sub>O added; any ppt. formed is filtered off, mixed with 500 ml. H<sub>2</sub>O, and heated 1 hr. on a water bath; cooling gives 2.5 g. of 4-aminosalicylic acid (VII), m. 215-6° (from dil. EtOH). VII (6 g.) mixed with 21 g. NaCl in 60 ml. concd. warm HCl reacts immediately with heat generation; on cooling the product is filtered, suspended in 50 ml. H<sub>2</sub>O, 1 ml. concd. HCl, treated with H<sub>2</sub>S with the temp. kept const. at 60°, filtered, and 25 ml. concd. HCl added to the filtrate; 5 g. 1 HCl (VIII), m. 229°, which yields 2,4-HO<sub>2</sub>C<sub>6</sub>H<sub>3</sub>(AcNH<sub>2</sub>)<sub>2</sub> (IX), m. above 300°, when treated with Ac<sub>2</sub>O and concd. H<sub>2</sub>SO<sub>4</sub>. I, m. 152-3° (from C<sub>6</sub>H<sub>6</sub>), is obtained by treating VIII with 1 mol. alc. NaOH, evap. to dryness, dissolving again in EtOH, and filtering off the NaCl.

Gerhard Auffer



Silberg, Alexandru

Sulfonamides, Alexandru Silberg, Dan Bedeleanu, Dumitru Telas, and Sabina Tisoc, Acad. rep. populare Romane, Fuzata Cluj, Studii cercetari stiint. 3, No. 1/2, 62-63(1962).—The following new compounds were synthesized:  $p\text{-PhNHCSNHCH}_2\text{SO}_2\text{NH}_2$ , m.  $200^\circ$  (from EtOH);  $p\text{-CH}_3\text{CH}_2\text{NHCSNHCH}_2\text{SO}_2\text{NH}_2$ , m.  $186^\circ$  (from EtOH);  $p\text{-(1-C}_6\text{H}_5\text{NHCSNH)}\text{CH}_2\text{SO}_2\text{NH}_2$ , m.  $191\text{--}2^\circ$ .  $p\text{-AcNHCH}_2\text{SO}_2\text{NH}_2$  (5 g.) is suspended in a soln. of 2.5 g. KCNS and 75 ml.  $\text{H}_2\text{O}$ , 35 ml.  $N$  HCl soln. added under agitation and the mixt. heated up on a water bath. On cooling, the sirupy liquid crystallizes to give  $p\text{-AcNHCH}_2\text{SO}_2\text{NHCSNH}_2$  (I), m.  $186\text{--}8^\circ$  (from  $\text{H}_2\text{O}$ ). I is hydrolyzed with three 25-ml. portions of  $2N$  NaOH soln.; acidification with AcOH gives  $p\text{-H}_2\text{NC}_6\text{H}_4\text{SO}_2\text{NHCSNH}_2$ , m.  $198\text{--}9^\circ$  (from  $\text{H}_2\text{O}$ ).  $p\text{-AcNHCH}_2\text{SO}_2\text{NHNHCSNH}_2$ , m.  $188^\circ$  (from EtOH), treated with HCl (1:4) gives on cooling  $p\text{-H}_2\text{NC}_6\text{H}_4\text{SO}_2\text{NHNHCSNH}_2\cdot\text{HCl}$ , m.  $210^\circ$ ; free base, m.  $218\text{--}20^\circ$  (from EtOH).  $p\text{-AcNHCH}_2\text{SO}_2\text{NHNHCSNH}_2\cdot\text{CH}_3\text{CH}_2\text{CH}_3$ , m.  $188^\circ$  (from glacial AcOH), with HCl (1:4), followed by  $2N$  NaOH gives the  $p\text{-H}_2\text{N}$  analog, m.  $175\text{--}6^\circ$  (from  $\text{H}_2\text{O}$ ).  $p\text{-AcNHCH}_2\text{SO}_2\text{NHNHCSNHPh}$ , m.  $213^\circ$  (from EtOH), similarly gave the  $p\text{-H}_2\text{N}$  analog, m.  $194\text{--}5^\circ$  (from EtOH).  $1\text{-C}_6\text{H}_5\text{NHCSNHNH}_2$  (1.5 g.) and 1.7 g.  $p\text{-AcNHCH}_2\text{SO}_2\text{Cl}$  (II) are dissolved in 15 ml. pyridine, after 24 hrs. the mixt. is quenched in 200 ml.  $\text{H}_2\text{O}$  and filtered, and the product dissolved in 10 ml. hot pyridine, and filtered hot; addn. of 4–5 ml. gave  $p\text{-AcNHCH}_2\text{SO}_2\text{NHNHCSNHCH}_2\text{H}_2$ , m.  $200^\circ$ . It was not possible to hydrolyze this compd. under the usual conditions.  $\text{PhCH}_2\text{CH}(\text{NH}_2)\text{CO}_2\text{H}$  (0.9 g.) suspended in 40 ml. 10%  $\text{Na}_2\text{CO}_3$  soln. is treated with 1.3 g. II, the mixt. filtered, and

2-Diethylaminoethyl 4-amino-2-chlorobenzoate hydrochloride. Alexandru Săbău and Dumitru Teles, *Acad. rep. populare române, Cluj, Studii cercetări științ.* 3, No. 1/2, 66-8(1962). —o-Toluidine (I) was nitrated by the Ullman and Grether method to yield 4,2-O<sub>2</sub>N(H<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>Me (II), m. 107° (from EtOH). Diazotization of II and treatment with CuCl<sub>2</sub> by the Ullman and Wagner method yields 2,4-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>Me (III), m. 65-8° (from EtOH). Oxidation of III with KMnO<sub>4</sub> and treatment of the resulting acid with SOCl<sub>2</sub> yielded 2,4-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>COCl (IV), a viscous liquid. IV treated with Et<sub>3</sub>NCH<sub>2</sub>CH<sub>2</sub>OH gave 2,4-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> (V), m. 125-30° (from C<sub>6</sub>H<sub>6</sub>). V reduced with SnCl<sub>2</sub>-concd. HCl yields 2,4-Cl(H<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>·HCl, m. 175-6°.

K. L. R.

SILBERG, ALEXANDRU

*chem* Thiourea derivatives. Alexandru Silberg, Dumitru Tefas and Dan Bedeleanu. Acad. rep. populare Romane, Filiala Cluj, Studii cercetari stiint. 3, No. 1/2, 70-8 (1952).—The following RNHCNHR' were synthesized by heating an amine, RNH<sub>2</sub>, and an isothiocyanate R'NCS with or without solvent (pyridine) on a water bath (starting materials, and m.p. given): α-aminopyridine (I) and CH<sub>2</sub>:CHCH<sub>2</sub>NCS (II), 108° (from 1:1 EtOH-H<sub>2</sub>O); I and PhNCS (III), 173° (from AcOH); I and 1-C<sub>6</sub>H<sub>5</sub>NCS (IV), 197-8° (from AcOH); 2-amino-4-methylthiazole (V) and II, 180° (from EtOH); V and III, 174° (from EtOH); V and IV, 180° (from AcOH); 2,4-HO(H<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>H (VI) and II, 173° (decompn.) (from EtOH); VI and III, 184° (from EtOH); VI and IV, 195° (from C<sub>6</sub>H<sub>5</sub>N-EtOH). In the expts. with VI, VI was dissolved in aq. Na<sub>2</sub>CO<sub>3</sub> (1 g. VI, 2 ml. H<sub>2</sub>O, and 0.8 g. Na<sub>2</sub>CO<sub>3</sub>), EtOH added and then the isocyanate, and the mixt. boiled a few min., dild. with H<sub>2</sub>O, and acidified with HCl to ppt. the thiourea. Krikor I. Reizhan

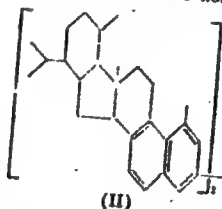
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577059. A

Sterols. VI. The action of hydrochloric acid upon chole-  
sterol and upon the bile acids (attempts to obtain stereo-  
genic hydrocarbons with a sterol structure). 1. F. S. S. S.  
A. Silberg, V. S. S. S., M. Ionescu, and M. T. T. T. T. T.  
Chim. Romania). Acad. rep. Populare Romania. Studii  
chim. 2, 223-34 (1954); cl. C.A. 46, 4024g. — F. S.  
(d. 1.7) and cholesterol treated in a sealed tube at 130° give  
a 3,3'-bicholestane (I), m. 149-52°. I dehydrogenated with  
Se yields II. Presumably neither I nor II are pure sub-



stances, but closely related isomers, or mixts. of materials  
 having a similar compn.; however, conventional sepn.  
 methods, like chromatography, fractional distn. at ordinary  
 or reduced pressures, differences in soly. in org. solvents or  
 in other physicochem. properties, have failed to split either  
 I or II into more than one compd. Cholic acid treated in  
 the same manner with HI at 130-80° furnishes amorphous  
 material only, from which no definite compd. could be iso-  
 lated, but the acidic material originally present is still there  
 to the extent of about 1/2 its original amt. Cholic acid  
 at 280° with HI, optionally in the presence of red P, is  
 quantitatively recovered; lithocholic acid under these con-  
 ditions forms amorphous matter. Werner Jacobson

RM

Silberg; A.

✓ 4-Mercaptosalicylic acid. A. Silberg and I. Simiti. Acad.

rep. populare Române, Filiala Cluj, Studii cercetări științ., Ser. I, Științe mat., fiz., chim. și teh. 5, No. 3-4, 135-40 (1954). -The compd. described (cf. C.A. 50, 15162g) as 4-mercaptosalicylic acid was found to be  $(SC_6H_4(OH)CO_2H)_2$  (I). The derivs. described are, consequently, derivs. of I. 4-Mercaptosalicylic acid (II), m. 203° (from aq. EtOH), was prepd. from its xanthic acid (III). This (0.1 g.) in 2 ml. EtOH is treated with 1 ml. of 10% aq. NaOH, the product is boiled 1-2 min., and cooled; concd. HCl is added dropwise and the ppt. is extd. immediately with  $C_6H_6$ . On removing the  $C_6H_6$ , II ppts. and is recrystd. (I is insol. in  $C_6H_6$ ). I can also be prepd. by heating 0.1 g. I in 5 ml. EtOH 10-15 min. with 0.5 g. Zn powder and 5 ml. 2N HCl at 40-50°, filtering, and concg. the filtrate on the steam bath until crystals appear. Cooling gives II, m. 205-7°. II can be oxidized to I with iodine. Oxidation of II with  $KMnO_4$  gave 4,3- $HO_2C(HO)C_6H_4SO_3H$ . Boiling II 2-3 hrs. with 30%  $H_2O_2$  gave 4,3- $HO_2C(HO)C_6H_4SO_3H$ , which has a very high m.p. (unspecified). Hydrazide of II m. 242°; boiling II with  $Ac_2O$  gave 4,3- $HO_2C(HO)C_6H_4SAC$ , m. 132-50°. III is prepd. by diazotizing 4-aminosalicylic acid at -8° with  $NaNO_2$ , treating the diazonium salt with  $Na_2C_4H_4OCS_2$  contg. a large amt. of a 10% soln. of  $Na_2Cl$ , keeping the product at room temp. for 48 hrs. or until all N has evolved, filtering, treating the residue with warm EtOH, filtering the slurry, treating the filtrate with active C, filtering, adding water slowly, filtering off the pptd. I, and adding more  $H_2O$  to ppt. III, m. 137°.

Gary Gerard

SLK DE RG, H.

2-Mercapto-4-nitrobenzoic acid and 4-amino-2-mercaptobenzoic acids. A. Silber and I. Ginitie. *Acad. rep. papers Romine, Publicat. Inst. Studii cercetari chim.* Ser. I, *Stimie mat., fiz., chim. si teh.* 5, No. 3-4, 141-7 (1934). Methods are given for the prepn. of 4,2-O<sub>2</sub>N(HS)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>H (I), 4,2-O<sub>2</sub>N(HS)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>H (II), 2,2'-dithio-4,4'-dinitrobenzoic acid (III), Me and Et esters of III, and the Et ester of II. The syntheses are similar to those described for the same compounds by Shebukina (*C.A.* 47, 6360a). Gary Gerard

ROMANIA / Chemical Technology. Chemical Products and H  
Their Applications. Pharmaceuticals. Vitamins.  
Antibiotics.

Abs Jour: Ref Zhur-Khimiya, 1959, No 4, 12793.

Author : Silberg, Al.; Tefea, D.; Simitti, I.; Ujvaru, E.

Inst : Not given.

Title : Production of 2-Chlor-T. B. 1 and 2-Chlornovocaine.

Orig Pub: Farmacia (Roman.), 1957, 6, No 6, 491-495.

Abstract: The principles and method used during synthesis  
of the substances mentioned from paranitrotoluene  
are presented. -- A. Vavilova.

Card 1/1

G-2

RUMANIA/Organic Chemistry. Organic Synthesis.  
Abs Jour : Ref Zhur-Khimiya, No 9, 1959, 31412

Author : Silborg, A., Proinov, I.  
: AS Rumania.

Inst  
Title

: On Some Reactions of Addition to Isothiocyanates. I. Addition of Thiosenicarbazides to Isothiocyanates and Study of Properties of Products Obtained.

Orig Pub : Studii si cercetari chim. Acad. RPR. Fil. Cluj, 1957, 8, No 3-4, 315-333

Abstract : In the research for physiologically active substances, compounds of the composition  $RNHCSNHNHCSNHR'$  (Ia to II, where a R =  $C_6H_5$ , R' = H; b R =  $C_3H_5$ , R' = H; c R =  $\alpha$ - $C_{10}H_7$ , R' = H; d R =  $C_6H_5$ , R' =  $C_3H_5$ ; e R =  $C_6H_5$ , R' =  $\alpha$ - $C_{10}H_7$ ; f R =  $C_6H_5$ , R' =  $\alpha$ - $C_{10}H_7$ ; g R =  $C_6H_5$ , R' =  $C_3H_5$ ; h R =  $C_6H_5$ , R' =  $\alpha$ - $C_{10}H_7$ ; i R =  $C_3H_5$ , R' =  $\alpha$ - $C_{10}H_7$ ) were obtained by heating the derivatives of thiosenicarbazide  $RNHCSNHNH_2$  (where R = H, allyl, phenyl,  $\alpha$ -naphthyl) with phenyl-, allyl- and  $\alpha$ -naphthylthiocyanates in  $C_6H_5N$ . The Ia obtained were oxidized into diimino-1,3,4-thiodiazolidines  $C(=NR)NHNHC(=NR')S$  (IIa-IIIi), from which the diacetyl derivatives  $C(=NR)N(CCCH_3)N(CCCH_3)C(=NR')S$  (IIIa-IIIi) were prepared. In the treatment of Ia-Ic with  $SnCl_2$  and  $H_3PO_4$  in  $CH_3COOH$  containing  $PCl_5$ , the group  $NHR'$  splits off and thiodiazoles  $C(NHR=NN=C(SH)S$  (IVa-IVd,

Card : 1/6

G-2

RUMANIA/Organic Chemistry. Organic Synthesis.

Abs Jour : Ref Zhur-Khimiya, No 9, 1959, 31412

R' = H; d R = R' =  $C_6H_5$ ; e R = R' =  $C_3H_5$ ; f R = R' =  $\alpha$ - $C_{10}H_7$ ; g R =  $C_6H_5$ , R' =  $C_3H_5$ ; h R =  $C_6H_5$ , R' =  $\alpha$ - $C_{10}H_7$ ; i R =  $C_3H_5$ , R' =  $\alpha$ - $C_{10}H_7$ ) were obtained by heating the derivatives of thiosenicarbazide  $RNHCSNHNH_2$  (where R = H, allyl, phenyl,  $\alpha$ -naphthyl) with phenyl-, allyl- and  $\alpha$ -naphthylthiocyanates in  $C_6H_5N$ . The Ia obtained were oxidized into diimino-1,3,4-thiodiazolidines  $C(=NR)NHNHC(=NR')S$  (IIa-IIIi), from which the diacetyl derivatives  $C(=NR)N(CCCH_3)N(CCCH_3)C(=NR')S$  (IIIa-IIIi) were prepared. In the treatment of Ia-Ic with  $SnCl_2$  and  $H_3PO_4$  in  $CH_3COOH$  containing  $PCl_5$ , the group  $NHR'$  splits off and thiodiazoles  $C(NHR=NN=C(SH)S$  (IVa-IVd,

Card

: 2/6

155



SILBERG, Al.; Simiti, i.

Direct derivation of some heterocycles from phenyl thiosemicarbazide.  
Studii cerc chimie Cluj 10 no.2:313-317 '59. (EAI 9:9)

i. I.M.F. Cluj - Facultatea de farmacie, Catedra de chimie organica.  
(Heterocyclic compounds) (Phenylthiosemicarbazide )

SILBERG, A.; SIMITI, I.

Preparation and behavior of 2-hydroxy-4-mercapto-benzhydrazide and of some of its derivatives. Studii cerc chimie Cluj 10 no.2:319-327 '59.  
(EEAI 9:9)

1. I.M.F. Cluj - Facultatea de farmacie, Catedra de chimie organica  
(Mercaptobenzoic acid hydrazide)  
(Hydroxy compounds)

SILBERG, Al.; PROINOV, I.

On some additions to isothiocyanates. III. Addition of aryl sulfonyl hydrazides to isothiocyanates, and preparation of some aryl sulfonyl hydrazones. Studii cerc chimie Cluj 10 no.2:329-334 '59. (EEAI 9:9)

1. I.M.F. Cluj - Facultatea de farmacie, Catedra de chimie organica.

(Isothiocyanates) (Aryl groups) (Sulfonyl group)  
(Hydrazides) (Hydrazones) (Thiosemicarbazide)

SILBERG, A.; SIMITI, I.; FARKAS, M.; SILBERG, S.; MANTSCH, H.

Contributions to the study of thiazoles. Rev chimie 7  
no. 1: 513-519 '62.

1. Medizinisch-Pharmazeutisches Institut, Laboratorium  
für organische Chemie der Fakultät für Pharmazie,  
Cluj.

SILBERG, Alexandru; FRENKEL, Zoltan; CORNUS, Liviu

Contributions to the study of thiazoles. Pt. 3. Studia Univ B-B  
S. Chem 7 no.2:23-30 '62.



SILBERG, A.; HAMBURG, Erica; FRENKEL, Z.; COLOS, L.

Contributions to the study of thiazoles. Pt. 7. Rev chimie Roum 9  
no.3:215-228 Mar '64.

1. Laboratory of Organic Chemistry, Faculty of Chemistry, Babes-  
Bolyai University, Cluj.

SILBERG, Alexandru; FENKEL, Zoltan; COMOS, Li in

Contributions to the study of thiazoles. Pt.4. Studia Univ.  
B-B S Chem 8 no.1:273-281 '63

1. "Babes- Bolyai" University, Cluj



1. The following information is being furnished to you:

Contributions to the study of the effects of the use of force  
in the field of international law, and the use of force in the field of international law.

1011A, C.; GILBERT, J.

Free radicals of phenothiazine and related compounds. Pt.1.  
Rev chimie nouv 9 no.8/9:505-514 1964.

1. Institut of Chemistry, Romanian Academy, Bucharest.

BOLEA, C.; SILBERG, I.

Preparation of phenothiazine-5-oxides with the aid of the alkylhydroperoxides. Studii cerc chimie Cluj 14 no.2:317-320 '63.

1. Institute of Chemistry, Rumanian Academy, Cluj Branch.
2. Corresponding Member of the Rumanian Academy (for Bodea)

1. 1. 1.

"On the Properties and Chemical Reactions of the Chloro-derivatives of Benzene-*m*-nitro-phenol." (p. 144)

20: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1946, Volume 16, No. 12

BODEA, Cornel; SILBERG, Ioan

Phenothiazones. 17.10. Rev chimie Roum 9 no.6/7:425-431 Je-Jl '64

1. Institute for Chemistry of the Romanian Academy, Cluj Branch,  
59-65 Donath St.

BODEA, Cornel; SILBERG, Ioan

Phenothiazone, Pt.10. Studii ce. chim 13 no.6/7:433-439  
Je-Jl '64

1. Institute of Chemistry of the Rumanian Academy, Cluj Branch,  
59-65 Donath St.

BODEA, Corneli; SILBERG, Ioan

Free radicals of phenothiazine and related compounds. Pt.1.  
Studii cerc chim 13 no.11:763-772 N '64.

1. Institute of Chemistry of the Rumanian Academy, Cluj,  
59-65 Donath Street.

SILBERG, A.; SIMITI, I.; FARKAS, M.; SILBERG, S.; MANTSCH, H.

Contributions to the study of thiazoles. Rev chimie 7  
no. 1: 513-519 '62.

1. Medizinisch-Pharmazeutisches Institut, Laboratorium  
fur organische Chemie der Fakultat fur Pharmazie,  
Cluj.



USSR / General Biology. Physical and Chemical Biology. B-1.  
Abs Jour: Ref Zhur-Biol., No 18, 1958, 80916.

Author : Strelin, G. S., Schmidt, N. K., Silberg, Yu. G.  
Inst : Not given.  
Title : The Problem of Local Action of X-rays.

Orig Pub: V sb.: Vopr. radiobiologii, 1956, 151-158.

Abstract: Results were observed of the partial irradiation of Turbellaria, Dendrocoelum lacteum, and of Annelida, Lumbriculus variegatus, after drenching them alive with a 7.5-15% solution of gelatin. Selective irradiation Head region (HR) and Tail region (TR) was attained by screening off the corresponding parts of the body by a lead plate. Turbellaria were irradiated by X-rays in doses of 2,500 to 5,000 h, 160 kv, 4 ma, without a filter, the distance from the anode 23 cm, the pow-

Card 1/3

S/079/60/030/04/51/080  
B001/B002

AUTHOR: Sil'berman, Ye. M.

TITLE: The Reaction Mechanism Between Nitriles } Carboxylic Acids,  
and Hydrogen Chloride at low Temperatures

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1277-1281

TEXT: The present paper deals with the reaction of chlorides of imonium chlorides with carboxylic acid in organic solvents (Refs. 1-5). It was assumed that in the reaction under consideration, namely between nitriles, carboxylic acids and HCl, the chlorides of imonium chlorides (I) which develop first, as a result of further bimolecular substitution, are converted into isoimide salts (II) of lower stability. Since these salts show a considerable acylation ability, they develop imonium hydrinchlorides (III) and acid anhydrides, if carboxylic acids are added. In a second reaction, acid chlorides may be obtained from acid anhydrides and HCl (Ref. 4), and also by acylation of hydrogen chloride with isoimide (Scheme (3)-(7)). For the confirmation of the assumed mechanism of the initial stage (Refs. 3,4), the conversion of acetic acid and adiponitrile was carried out in the pre-

Card 1/3

The Reaction Mechanism Between Nitriles, Carboxylic Acids, and Hydrogen Chloride at low Temperatures

S/079/60/030/04/51/080  
B001/B002

molecule of carboxylic acid and develops imonium hydrinchloride (of the hydrochloride of the amide), and acid chloride. There are 1 table and 10 references, 5 of which are Soviet. ✓

SUBMITTED: March 24, 1959

Card 3/3

ACC NR: AP6027694

SOURCE CODE: CZ/0057/66/000/004/0166/0170

THOR: Silbornagel, Arnost

30E

: Research and Testing Institute, NIKG, Ostrava (Vyzkumny a zkusebni ustav NIKG)

TITLE: Problem of thermal equilibrium of steel casting forms

SOURCE: Hutnik, no. 4, 1966, 166-170

TOPIC TAGS: thermal equilibrium, metal casting, rimmed steel, metal stress, plastic deformation, stress analysis

ABSTRACT: A study of two 10 ton forms for rimmed steel casting was made. The calculation of the tensional stresses in the outside walls of the forms, using the equation derived for a fixed rod, indicated stresses exceeding the strength of the material. As the forms do not break during casting operations the author assumes that the inner layer of the form walls, immediately after casting, is in the region of plastic deformation. This partially releases the compression stresses and also influences the parts that are under stress in tension. The cross-sectional shape of the ingot is the most important factor of the thermal equilibrium. It is impossible to design a thermally balanced form for a convex shape. Such forms must be strengthened at the walls and at the corners. Orig. art. has: 17 figures, 8 formulas and 4 tables.

[JPRS: 36,646]

SUB CODE: 11, 20, 13 / SUBH DATE: none / ORIG REF: 005 / SOV REF: 001 / OTH REF: 004

Cord 1/1 K

SILBERMAGEL, Josef

Our public phototelegraphic service. Cs spoje 7 no.1:10-11  
Ja '62.

1. Pracovník Ministerstva dopravy a spoju.



SILBERSDORFF, "L"

TOBBTERMELES  
INDUSTRIAL ORGANIZATION  
Vol. 5 1951  
No. 1-2, Jan.-Feb.

4.3.4. RETAILER'S LITERATURE CLASSIFICATION

**CIA-RDP86-00513R001550610002-1"**

SILBERSDORFF, Laszlo

Rubber suspension for railroad vehicles. Kozleked tud sz ll no.11:  
523-528 N '61.



SILBERSHEY, M M.

1968. The problem of multiplication coefficient for the power supply of a range of induction motors. *Neftyanaya khim. M. Vost. Elektromot. (No. 9) 9-1 (1968) in Russian.*—A criticism of Abstr. 3401 (1968). Electrical performance, production standardization and economic considerations are reviewed, and a power multiplication coefficient of 1.6 for the 6 selected types of motors from 0.4 to 7.0 kW rating is suggested.  
A. L.

ASD SLA METALLURGICAL LITERATURE CLASSIFICATION

SILBERSKY, Rudolf, inz.

Arrangement of relay schemes in logical circuits with NOR members.  
Automatizace 6 no.9:213-218 S '63.

1. Konstrukta Trencin, n.p.

SILBERSTEIN, B., ing.

Causes of difficulties met during conveyance of paraffinous crude  
oil from Berca through pipelines. Petrol si gaze 14 no.2:87-91  
F '63.

SIL'BERSHTEYN, D.S.; ZAKHLEBNAYA, O.G.

Formation of loops by the ileum caused by Meckel's diverticulum.  
Nov.khir.arkh. no.2:74 Mr-Apr '57. (MLRA 10:8)

1. Khirurgicheskoye otdeleniye Svalyavskoy rayonnoy bol'nitsy  
(INTESTINES--ABNORMALITIES AND DEFORMITIES)

TSITKIN, I.S., oblastnoy ortoped-travmatolog; SIL'BERSHTEYN, D.Z.

Experience in the prevention of accidents and the organization of  
traumatologic first aid in the lumber industry of Svalyava. Ortop.,  
travm. i protes. 18 no.1:50-52 Ja-F '57. (MIRA 10:6)

1. Zav. khirurgicheskim otdeleniyem Svalyavskoy raybol'nitsy  
(Zakarpatskaya obl.) (for Sil'bershteyn)

(WOUNDS AND INJURIES, prev. and control  
in lumber indust.)

(INDUSTRIAL HYGIENE  
prev. & control of inj. in lumber indust.)

RUMANIA/Chemical Technology. Chemical Products      H  
and Their Applications. Chemical Pro-  
cessing of Natural Gases and Petroleum.  
Motor and Rocket Fuels. Lubricants.

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 20894

Author : Silberstein, B.

Inst :                     

Title : The Quality of Petroleum Residue for the  
Optimal System of the Thermal Cracking  
Process.

Orig Pub : Petrol si gaze, 1957, 8, No 12, 623-633

Abstract : The properties of the raw material which  
is used for cracking are examined. The  
physicochemical constants of the different  
hydrocarbons of petroleum and their group  
are cited, and the significance of specific  
weight and boiling temperature is especially

Card : 1/2

SILBERSTEIN, E.

An analyzing method in the selection of the crude oils suitable for the manufacture of paraffin by means of filter press. p. 175.

PETROL SI GAZE. (Asociatia Stiintifica a Inginerilor si Technicienilor din Romina si Ministerul Industriei Petrolului si Chimiei) Bucuresti, Rumania; Vol. 9, no. 4, Apr. 1958

Monthly List of East European Accessions (SEAI) LC Vol. 8, no. 9, <sup>Sept.</sup> 1959

Uncl.

Hygiene of the work atmosphere and its influence on the health of workers in the textile industry Pracovní Lékarství, Prague 1950, 2/1 (20-25)

The paper deals with the results of an investigation of the working conditions and of the medical examination of employees in a textile plant. The dustiness of the atmosphere was 1,750 mil. parts/cu.m. Particles smaller than 5  $\mu$  numbered 10-560 mil. per cu.m.; in one workshop with no proper exhausting system 770 mil. per cu.m. Different types of raw cotton were examined bacteriologically for their content of allergens and histamine-like substances. Esch. coli, B. proteus, M. pyogenes aureus, and Aerobact. aerogenes were grown. Clinical examination revealed that only in men who had long been in this employment and were older than 30-40 years, were there to be found cases of chronic bronchitis, emphysema and bronchial asthma. The blood count showed leucocytosis and eosinophilia. Eosinophils were also found in the sputa. Sensitivity tests with allergens obtained from raw cotton were negative except in one case. There were no other particular findings, even in a group of 800 juvenile workers.

Rejsek - Prague

SO: Medical Microbiology & Hygiene, Section IV, Vol 3 No 7-12



. SIL'CHENKO, A.D.

Using the "Pendan" dosimeter. TSement 26 no.5:27-28 S-0 '60.

(MIRA 13:10)

(Yenakiyevo--Cement plants--Equipment and supplies)

А.И. ЧЕНЧОВ А.И. ЧЕНЧОВ; МОРДУКОВИЧ, В.И.

Ways of improving the process of burning clinkers in kilns with  
slurry concentrators. Tsement 31 no.5:15-16 S-O '65.

(MIRA 18:10)

1. Kramatorskiy tsementnyy zavod.

SIL'CHENKO, A.S.

Kotlas Combine. Bum.prom. 36 no.11:8-9 N '60. (MIRA 13:11)

1. Direktor Kotlasskogo tsellyulozno-bumazhnogo kombinata.  
(Kotlas—Paper industry—Equipment and supplies)

SIL'CHENKO, A.S.; AKSYUCHITS, P.I.

A combine of progress. Bum. prom. 36 no.9:15-17 S '61.  
(MIRA 15:1)

1. Direktor Kotlasskogo tsellyulozno-bumazhnogo kombinata (for  
Sil'chenko). 2. Glavnyy inzh. Kotlasskogo tsellyulozno-bumazhnogo  
kombinata (for Aksyuchits).  
(Kotlas--Woodpulp industry)

SIL'CHENKO, A.S.

Learning from experience. Bum. prom. 38 no.10:3 0 '63.

1. Direktor Kotlasskogo tsellyulozno-bumazhnogo kombinata.

SIL'CHENKO, A.S.

Progress-securing measures. Bum.prom. 38 no.9:8-9 S '63.  
(MIRA 16:11)

1. Direktor Kotlasskogo kombinata.

SIL'CHENKO, K.Ya.

~~Regulating effect of the central nervous system on the blood in man.~~  
Zhur.vys.nerv.deiat. 4 no.4:482-493 J1-Ag '54. (MLRA 8:3)

1. Kafedra propedevtiki vnutrennikh bolezney Leningradskogo gosudarstvennogo pediatricheskogo meditsinskogo instituta.  
(HYPERTENSION, therapy,  
sleep thar.)  
(SLEEP, therapeutic use,  
hypertension)

SIL'CHENKO, K.Ya., dotsent

Treatment of cholelithiasis with an alcoholic infusion of barberry  
leaves. Vrach. delo no. 3:45-48 Mr '61. (MIRA 14:4)

1. Gosptal'naya terapevticheskaya klinika (zav. - prof. K.A.  
Dryagin) Leningradskogo pediatricheskogo meditsinskogo instituta.  
(CALCULI, BILIARY) (BARBERRIES—THERAPETIC USE)



DRZAGIN, K.A., prof.; SIL'CHENKO, K.Ya., dotsent

Treatment of cholecystitis and postcholecystectomy diseases with barberry tincture and berberine sulfate. Trudy IPMI 31 no.2:42-54 '63.  
(MIRA 17:10)

1. Iz kafedry gosspital'noy terapii Leningradskogo pediatricheskogo meditsinskogo instituta.

SILICHENKO, K.Ya., 1949.

Early diagnosis of endometriosis. Tr. 1981 31 no. 450-511 1981.  
(MIR 1981)

1. 12 hospitalizations for endometriosis. 1981. 1981. 1981.  
1981. 1981. 1981. 1981. 1981. 1981. 1981. 1981. 1981. 1981.

SIL'CHENKO, L.A., inzh.; MIKHAYLOV, N.V., doktor tekhn. nauk, prof.

Seasoning of lightweight and cellular concrete before heat  
and moist curing. Stroi. mat. 11 no.1:10-12 Ja '65.  
(MIRA 18:6)

SIL'CHENKO, L. A.: Master Med Sci (diss) -- "Clinical and experimental observations of the effect of tropacine". Kuybyshev, 1958. 15 pp (Kuybyshev State Med Inst), 230 copies (KL, No 6, 1959, 146)